

EX

Notice of Allowability

Application No.

10/731,503

Examiner

Steven J. Fulk

Applicant(s)

WU, SHYE-LIN

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 11 January 2006.
2. ☒ The allowed claim(s) is/are 6-9.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

1. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

BRADLEY K. SMITH
PRIMARY EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

In the claims:

In claim 6, line 9, replace "trenched" with --trenches--.

In claim 9, line 9, replace "trenched" with --trenches--.

Response to Arguments

2. Applicant's amendment, filed January 11, 2006, which amends claim 6 and adds new claim 9 has been entered.

3. Applicant's arguments, see page 4, with respect to the rejection under 35 U.S.C. § 112, second paragraph, of claim 6 have been fully considered and are persuasive. The 35 U.S.C. § 112, second paragraph rejection of claim 6 has been withdrawn.

4. Applicant's arguments, see pages 4-5, with respect to the rejection under 35 U.S.C. § 103(a) of claims 6-8 have been fully considered and are persuasive. The 35 U.S.C. § 103(a) rejection of claims 6-8 has been withdrawn.

Allowable Subject Matter

5. Claims 6-9 are allowed.

6. The following is an examiner's statement of reasons for allowance: a reasonable search of the prior art failed to find a power rectifier device comprising a

pair of field oxide regions separated by a first mesa, a pair of termination regions spaced from the field oxide regions by a second mesa, trenches formed in the first and second mesa, and four p-type doped regions beneath each of the termination and field oxide regions.

Chang et al. '996, '033 and '541 disclose a power rectifier device with pair of field oxide regions separated by a first mesa and trenches with p-doped regions in the mesa, but do not teach a pair of termination regions spaced from the field oxide regions by a second mesa.

Hsu et al. '929 and Kalnitsky et al. '688 disclose a power rectifier device with pair of field oxide regions separated by a first mesa, but do not teach a pair of termination regions spaced from the field oxide regions by a second mesa or four p-doped regions beneath each of the termination and field oxide regions.

Wakatabe et al. '669, Tsui et al. '951 and Tu et al. '195 disclose a power rectifier device with trenches in a n- drift layer, but do not teach a pair of field oxide regions separated by a first mesa, a pair of termination regions spaced from the field oxide regions by a second mesa or four p-type doped regions beneath each of the termination and field oxide regions.

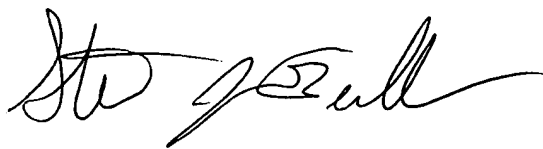
7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

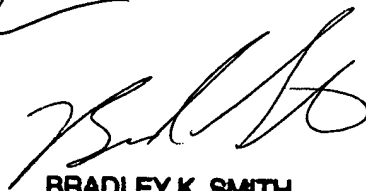
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Fulk whose telephone number is (571) 272-8323. The examiner can normally be reached on Monday through Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Patent Examiner
Art Unit 2891



BRADLEY K. SMITH
PRIMARY EXAMINER

February 2, 2006